

Claims

1. A ceramic heater, comprising an insulative ceramic base material and a heat-generating resistor embedded in the insulative ceramic base material, being characterized in that the heat-generating resistor comprises, as main components, silicon nitride, an electrically conductive compound and a grain boundary amorphous glass phase; the amount of a rare earth element contained in the heat-generating resistor is less than 2% mol in terms of its oxide (RE_2O_3 ; RE representing a rare earth element); and, when the mol number of the rare earth element in terms of its oxide is represented by A and the mol number of an amount of excess oxygen in terms of silicon dioxide (SiO_2) contained in the heat-generating resistor is represented by B, a volume R computed by the following formula (1) is 0.3 or less:

$$R=A/(A+B) \quad (1)$$

2. The ceramic heater as set forth in Claim 1, wherein the content of the electrically conductive compound in the heat-generating resistor is from 20 to 30% by volume.

3. The ceramic heater as set forth in Claim 1, wherein the rare earth element oxide is Er_2O_3 and/or Yb_2O_3 .

4. The ceramic heater as set forth in Claim 1, wherein the electrically conductive compound is tungsten carbide and/or zirconium boride.

5. The ceramic heater as set forth in Claim 4, wherein the content of the electrically conductive compound in the heat-generating resistor is from 20 to 30% by volume.

6. A glow plug, characterized by comprising the ceramic heater as set forth in Claim 1.

7. The glow plug as set forth in Claim 6, wherein the content of the electrically conductive compound in the heat-generating resistor is from 20 to 30% by volume.

8. The glow plug as set forth in Claim 6, wherein the rare earth element oxide is Er_2O_3 and/or Yb_2O_3 .

9. The glow plug as set forth in Claim 6, wherein the electrically conductive compound is tungsten carbide or zirconium boride.